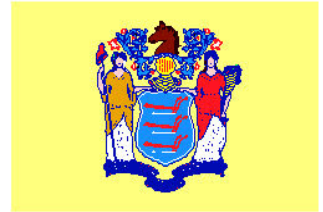




NOAA Research in New Jersey



NJ-1 through 13 (Statewide)

Climate and Global Change Program

NOAA is responsible for providing climate information to the nation in order to prepare and protect climate sensitive sectors of society and the economy. To carry out this mission, NOAA's Climate and Global Change Program conducts focused scientific research to understand and predict variations of climate. The program is comprised of a number of research elements, each focusing on a specific aspect of climate variability. Taken together, this research contributes to improved predictions and assessments of the effects of climate variability and change on different environments over a continuum of time scales from season to season, year to year, and over the course of a decade and beyond. This research is accomplished through the strong support of the academic and private sectors, as well as NOAA and other federal laboratories. In FY 2001, NOAA's Climate and Global Change Program provided approximately \$1.8 million in support of climate research in the State of New Jersey. For more information please visit <http://www.ogp.noaa.gov>

NJ-1 through 13 (Based in Fort Hancock - serves entire state)

National Sea Grant College Program

New Jersey Sea Grant College Program

The New Jersey Sea Grant College Program, part of the National Sea Grant College Program, is a regional network of research, education, and outreach services that works to promote the wise use of marine resources. Current research programs include developing marine biotechnology products with potent antibiotic capabilities; development of molecular probes to distinguish among non-point sources of bacterial contamination; metal biogeochemistry in marine phytoplankton; organic nitrogen impacts on coastal embayments; linkages between primary production and secondary production of marine transients; impacts of *Phragmites australis* invasion on coastal fisheries, and rebuilding the state's shellfish industry through the development of disease resistant oysters, and triploid hard clams. The public, industry, and policy makers are kept informed on issues relating to coastal ecosystem health, fisheries research, coastal engineering, hazard mitigation, and environmental modeling through New Jersey Sea Grant's education and outreach programs. In FY 2001, New Jersey Sea Grant projects received funding of approximately \$1.1 million from the National Sea Grant College Program. For more information please visit <http://www.njmsc.org>

NJ-6 (New Brunswick)

National Undersea Research Program Mid-Atlantic Bight National Undersea Research Center

The Mid-Atlantic Bight (MAB) National Undersea Research Center is administered by the Institute of Marine and Coastal Sciences at Rutgers University in New Brunswick, NJ. It is one of six regional centers supported by the National Undersea Research Program (NURP). The MAB Center supports undersea research in the Mid-Atlantic Bight, a region which extends from Montauk, N.Y. to the Virginia/North Carolina border. The Center provides access to undersea research platforms (such as submersibles, remotely operated vehicles, undersea sensors and sampling equipment, and SCUBA), including Long Term Environmental Observatories (LEOs). The LEO-15, consisting of two unmanned seafloor observatories approximately 9 kilometers off the central coast of New Jersey in 15 meters of water, is linked to the Rutgers Marine Field Station in Tuckerton, NJ with an electro-optic cable to provide researchers access to the equipment in real-time. Key research includes processes governing change and stability in ecosystems of the seabed and coastal and oceanic waters, distinguishing between natural and anthropogenic changes in the marine environment, characteristics of essential fish habitat, recruitment of marine organisms, and the effects of physical and environmental processes on water disposal, fisheries, nuisance algal blooms, biodiversity/habitat, hypoxia, toxic contaminants and pathogens. The FY 2001 funding for the MAB center totaled \$1.34 million. For more information please visit <http://marine.rutgers.edu/nurp/mabnurc.html>

NJ-6 (New Brunswick)

Ocean Exploration

In 2001, with a \$4 million appropriation from Congress, NOAA launched a systematic, strategic effort through the Office of Ocean Exploration to search and investigate the oceans for the purpose of discovery. Scientists from the Rutgers Institute of Marine and Coastal Sciences participated in the Deep East voyage. Conducted during September and October of 2001, Deep East scientists explored three regions of the Atlantic Ocean stretching from Maine to Georgia. For more information please visit <http://www.oceanexplorer.noaa.gov>

NJ-6 (Sandy Hook)

Forecast Systems Laboratory GPS Meteorological Observing System

NOAA's Forecast Systems Laboratory (FSL) operates a rapidly expanding network of GPS Meteorological (GPS-Met) Observing Systems to monitor the total quantity of precipitable water vapor in the atmosphere. Currently, there are 93 systems over the contiguous 48 states and Alaska, and plans are being made to extend these observations to Hawaii, Puerto Rico, the Caribbean Islands, and Central America. Water vapor is an important but under-observed component of the atmosphere that plays a major role in severe weather events and the global climate system. GPS-Met systems provide accurate water vapor measurements under all weather conditions, including thick cloud cover and precipitation, and do so at very low cost. The network is being developed by FSL in cooperation with federal, state and local government agencies, universities, and the private sector.

The GPS stations provide high-accuracy surveying and navigation services for National defense, automated agriculture, safe land and marine transportation, government infrastructure management, and 911 emergency response services. Fortuitously, these systems can also be used for meteorology with the addition of surface weather sensors. A GPS-Met system is operated by the U.S. Coast Guard near Sandy Hook. For more information please visit <http://www.gpsmet.noaa.gov/jsp/index.jsp>

NJ-12 (Princeton)

Geophysical Fluid Dynamics Laboratory

NOAA's Geophysical Fluid Dynamics Laboratory (GFDL) in Princeton is one of the world's leading environmental research modeling laboratories in the production of timely and reliable knowledge on natural and anthropogenic climate changes and in the development of the required comprehensive earth system models. GFDL's research expands the scientific understanding of the physical processes that govern the behavior of the atmosphere and the oceans as complex fluid systems. These systems can then be modeled mathematically and their phenomenology can be studied by computer simulation methods. In particular, GFDL research concerns: the structure, variability, predictability, stability, and sensitivity of global and regional climate; the structure, variability, and dynamics of the ocean over its many space and time scales; the interaction of the atmosphere and oceans, and how the atmosphere and oceans influence and are influenced by various greenhouse gases and aerosols; the predictability of weather on large and small scales; and the Earth's atmospheric general circulation. Research efforts at GFDL are geared toward enhancing the nation's capability to predict a broad range of phenomena including tropical cyclones, El Niño/La Niña, global climate change, and the circulation and chemistry of the atmosphere and oceans through the development of numerical models. GFDL is a \$22 million laboratory (\$12.8 million in NOAA base) with a staff of 110, including 85 federal employees and 20 university visiting scientists and graduate students. For more information please visit <http://www.gfdl.noaa.gov>

NJ-12 (Princeton)

Geophysical Fluid Dynamics Laboratory Atmospheric and Oceanic Sciences Program

The Atmospheric and Oceanic Sciences (AOS) Program is a collaborative research and education program with GFDL and Princeton University. The program offers a stimulating environment in which to conduct independent research toward an advanced degree and/or to collaborate with resident scientists on problems of theoretical or practical interest. Many of the leading scientists in these fields were educated as part of the AOS Program. Each program scientist is assigned a host with related research interests from within the AOS Program to assure a point of contact. NOAA, through GFDL, provides about \$2 million per year to the AOS Program through student and postdoctoral support and computer resources. The AOS Program's research addresses such diverse topics as theory and modeling of climate, fluid dynamics of geophysical systems, physical and chemical oceanography, dynamical meteorology, weather prediction, and environmental chemistry. For more information please visit <http://www.aos.princeton.edu>

**Climate and Global Change Program
Carbon Modeling Consortium**

NOAA's Climate and Global Change Program provides support for the Carbon Modeling Consortium (CMC) at Princeton University. The CMC is a collaborative project with the NOAA Geophysical Fluid Dynamics Laboratory. The goal of CMC is to develop an understanding of the processes governing carbon fluxes on basin or continental scales by (1) evaluating the magnitude of fluxes on the basin and continental scale, (2) identifying key processes that regulate these fluxes, and (3) developing models to predict how these fluxes might change over centennial time scales in response to human activity and climate change. For more information please visit <http://www.cmc.princeton.edu>

For further information about these and other NOAA programs, please contact NOAA's Office of Legislative Affairs at (202) 482-4981.

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